MICROSENS

4 Port Industrial Device Server Manual

Overview

Industrial Device Server is an innovative 4 ports RS232/422/485 to 2 ports LAN device server with optional isolation RS-422/485 serial ports and one PoE PD Ethernet port. Users are able to configure Device Server by VCOM Manager via LAN port. MS655420 offers many powerful features for HW & SW redundant functions. When the connection between master-link and LAN fails, the Device Server can automatically switch to another LAN port within 10ms, and still guarantee a non-stop connection.

MS655420 also supports switch mode, users can use Daisy Chain to reduce the usage of Ethernet switch ports. Secondly, the Device Server can simultaneously transfer data into 5 host PCs. This feature can assure all critical data that saved in different host PCs to avoid Ethernet break or host PCs failure.

Thirdly, the MS655420 provides dual redundant power inputs on terminal block. The Device Server also provides NAT pass through function so that users are able to manage it inside or outside the NAT router. It is easy for different IP domain users to use the Device Server. Therefore, MS655420 is the best communication redundant solution for current application of serial devices.

Features

Software:

- Redundant Dual Ethernet Ports: Recovery time < 10ms.
- Switch Mode Supported: Daisy Chain support to reduce usage of switch ports.
- NAT-pass through: User can manage the Device Server through NAT router.
- Redundant Power Inputs: 12~48VDC on terminal block.
- Redundant multiple host devices: 5 simultaneous in Virtual COM, TCP Server, TCP Client mode, UDP.
- Secured Management by HTTPS and SSH.
- Versatile Modes: Virtual Com, Serial Tunnel, TCP Server, TCP Client, UDP
- Event Warning by Syslog, Email, SNMP trap, Relay and Beeper
- Various Windows O.S. supported: Windows NT/2000/ XP/ 2003/VISTA 32bits

Hardware:

- Redundant Power Inputs: 12~48 VDC on terminal block and power jack
- Operating Temperature: -10 to 60°C
- Storage Temperature: -20 to 85°C
- Operating Humidity: 5% to 95%, non-condensing
- Casing: IP-30
- 2x 10/100Base-T(X) Ethernet port
- Optional 1x PoE PD port
- 4 isolated serial port
- Dimensions (W x D x H): 52 mm x 106 mm x 144 mm

Hardware Installation

Install the Device Server on DIN-Rail

Each Device Server has a DIN-Rail kit on rear panel. The DIN-Rail kit helps MS655420 to fix on the DIN-Rail. It is easy to install the Device Server on the DIN-Rail:

Mount the Device Server on DIN-Rail

Step 1: Slant the device and mount the metal spring to DIN-Rail.

Step 2: Push the device toward the DIN-Rail until you heard a “click” sound.

Wall Mounting Installation

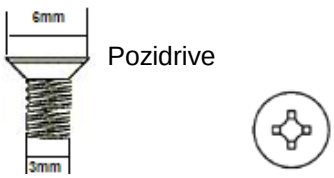
Each device has another installation method for you. A wall mount panel can be found in the package. The following steps show how to mount the device on the wall:

Mount the Device Server on wall

Step 1: Remove DIN-Rail kit.

Step 2: Use 6 screws that can be found in the package to combine the wall mount panel. Just like the picture shows below:

The screws specification shows in the following two pictures. In order to prevent the Device Server from any damage, the size of screws should not be larger than the size that used in MS655420.



Step 3: Mount the combined device on the wall.

Hardware Overview

Front Panel LEDS

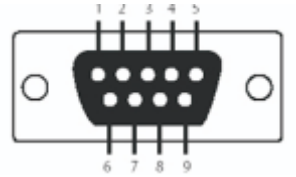
The following table describes the labels that stick on the Device Server.

LED	Color	Status	Description
P.O.E	Green / Red	On	Power supplied over Ethernet Cable
		Red Blinking	Indicates and IP conflict, or DHCP or BOOTP server did not respond properly
PWR1	Green/Red	On	DC power 1 activated.
		Red blinking	Indicates an IP conflict, or DHCP or BOOTP server did not respond properly
PWR2	Green/Red	On	DC power 2 activated.
		Red blinking	Indicates an IP conflict, or DHCP or BOOTP server did not respond properly
Fault	Red	On	Fault event occurred.
S1 ~ S4	Green	Blinking	Serial port is transmitting data
	Red	Blinking	Serial port is receiving data
ETH1	Green/Amber	Green On/Blinking	100Mbps LNK/ACT
		Amber On/Blinking	10Mbps LNK/ACT
ETH2	Green/Amber	Green On/Blinking	100Mbps LNK/ACT
		Amber On/Blinking	10Mbps LNK/ACT

Serial Ports

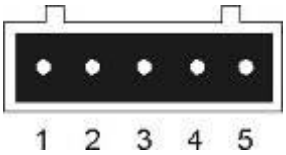
There 4 serial ports on the front panel of the Device Server shown as below:

DB9 connector



Pin #	RS 232	RS 422	RS 485 (4 wire)	RS 485 (2 wire)
1	DCD	RXD -	RXD -	
2	RXD	RXD +	RXD +	
3	TXD	TXD +	TXD +	DATA +
4	DTR	TXD -	TXD -	DATA -
5	GND	GND	GND	GND
6	DSR			
7	RTS			
8	CTS			
9	RI			
RS 232 mod act as DTE				

5 Pin Terminal block connector

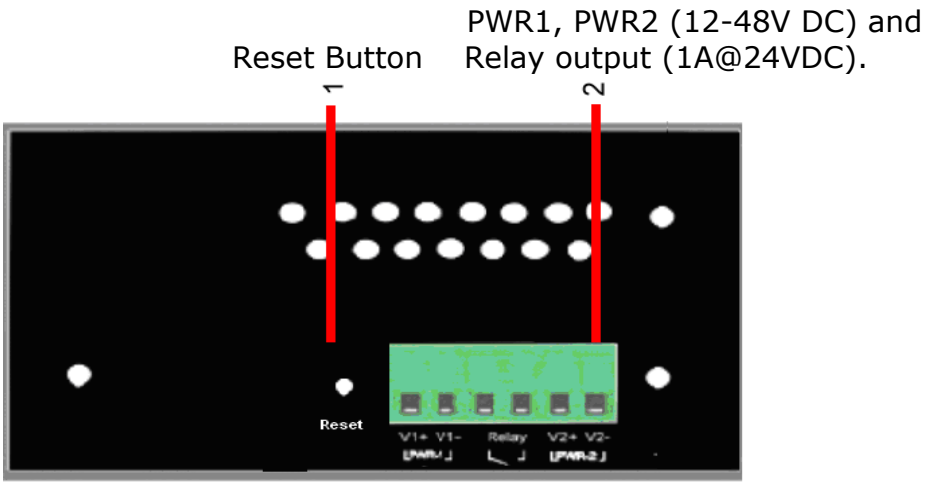


Pin #	RS 422	RS 485 (4 wire)	RS 485 (2 wire)
1	GND	GND	GND
2	RXD -	RXD -	
3	RXD +	RXD +	
4	TXD -	TXD -	DATA -
5	TXD +	TXD +	DATA +

Bottom Panel

The bottom panel components of the Device Server are shown as below:

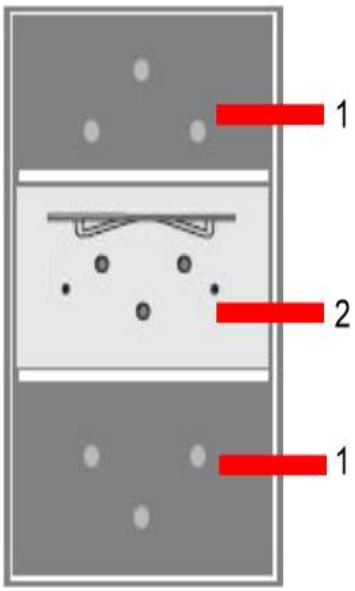
1. Terminal block includes: PWR1, PWR2 (12 ~ 48V DC) and Relay output (1A@24VDC).
2. Reset button. 5 seconds for factory default.



Rear Panel

The rear panel components of MS655420 are shown as below:

1. Screw holes for wall mount kit.
2. DIN-Rail kit



Cables

Ethernet Cables

The Device Server has standard Ethernet ports. According to the link type, the MS655420 use CAT 3, 4, 5,5e UTP cables to connect to any other network device (PCs, servers, switches, routers, or hubs). Please refer to the following table for cable specifications.

Cable	Type	Max. Length	Connector
10BASE-T	Cat. 3, 4, 5 100-ohm	UTP 100 m (328 ft)	RJ-45
100BASE-TX	Cat. 5 100-ohm UTP	UTP 100 m (328 ft)	RJ-45

100BASE-TX/10BASE-T Pin Assignments

With 100BASE-TX/10BASE-T cable, pins 1 and 2 are used for transmitting data, and pins 3 and 6 are used for receiving data.

Pin Number	Assignment
1	TD+
2	TD-
3	RD+
4	P.O.E. power input +
5	P.O.E. power input +
6	RD-
7	P.O.E. power input -
8	P.O.E. power input -

The Device Server supports auto MDI/MDI-X operation. You can use a straight-through cable to connect PC to MS655420. The following table below shows the 10BASE-T/ 100BASE-TX MDI and MDI-X port pin outs.

Pin Number	MDI port	MDI-X port
1	TD+(transmit)	RD+(receive)
2	TD-(transmit)	RD-(receive)
3	RD+(receive)	TD+(transmit)
4	Not used	P.O.E. power input +
5	Not used	P.O.E. power input +
6	RD-(receive)	TD-(transmit)
7	Not used	P.O.E. power input -
8	Not used	P.O.E. power input -

Note: *"**+**" and "**-**" signs represent the polarity of the wires that make up each wire pair.*

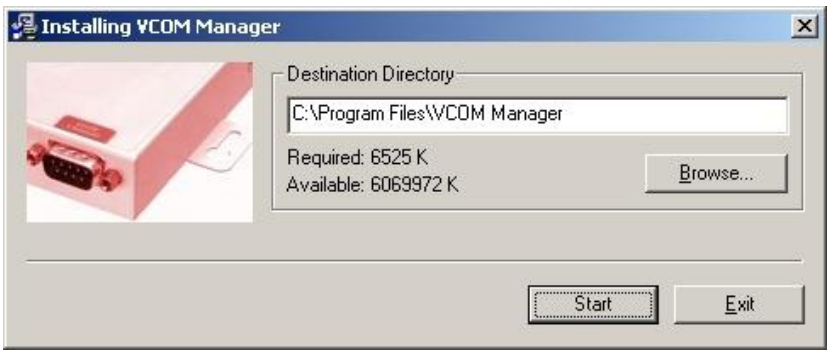
Management

VCOM Manager

VCOM Manager is a powerful Windows utility for the Device Server. It supports device discovery, device configuration, group setup, group firmware update, monitoring functions...etc. It is easy for you to install and configure devices over the network.

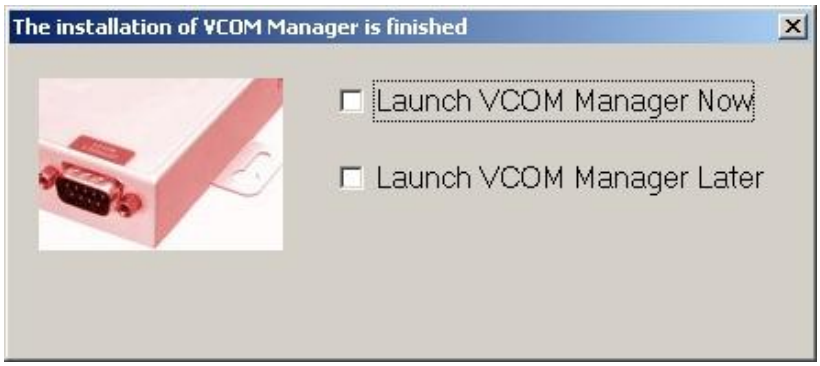
Install VCOM Manager

Step 1: Execute the Setup program, click "**start**" after selecting the folder for VCOM Manager.



Step 2: When installation complete successfully, then click "OK".

Step 3: Check for your selection.

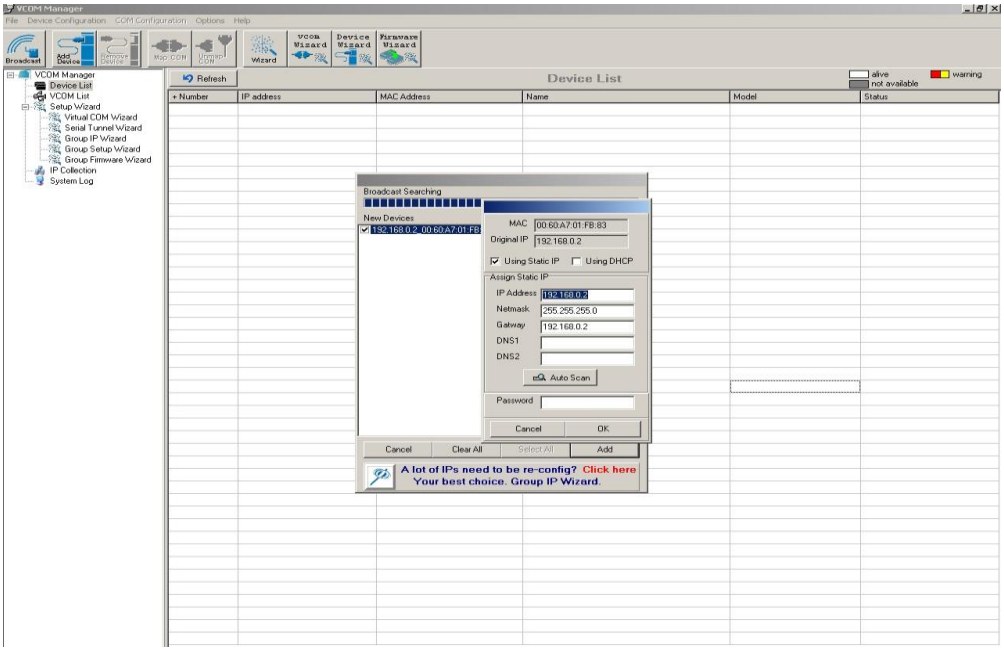


Using VCOM Manager

Explore device servers

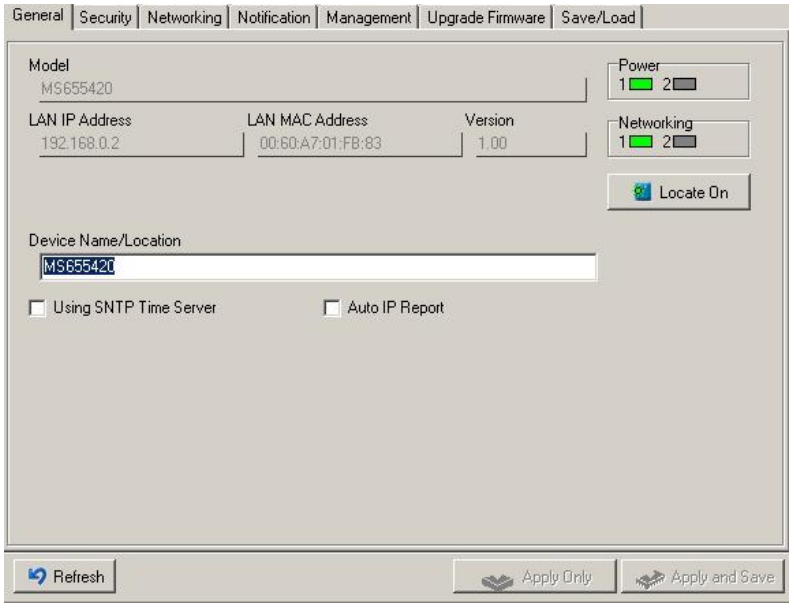
VCOM Manager will broadcast to the network and search all available devices in the network. The default IP address of device is "**192.168.16.1**", and selects the searching device you wish to use and press "**Add**" button.

You can set static IP address or in DHCP client mode to get IP address automatically. Finally, click "**OK** "button to add the device.



Configure device servers

General settings
This page includes the setting of device name, SNTP server and Auto IP Report.

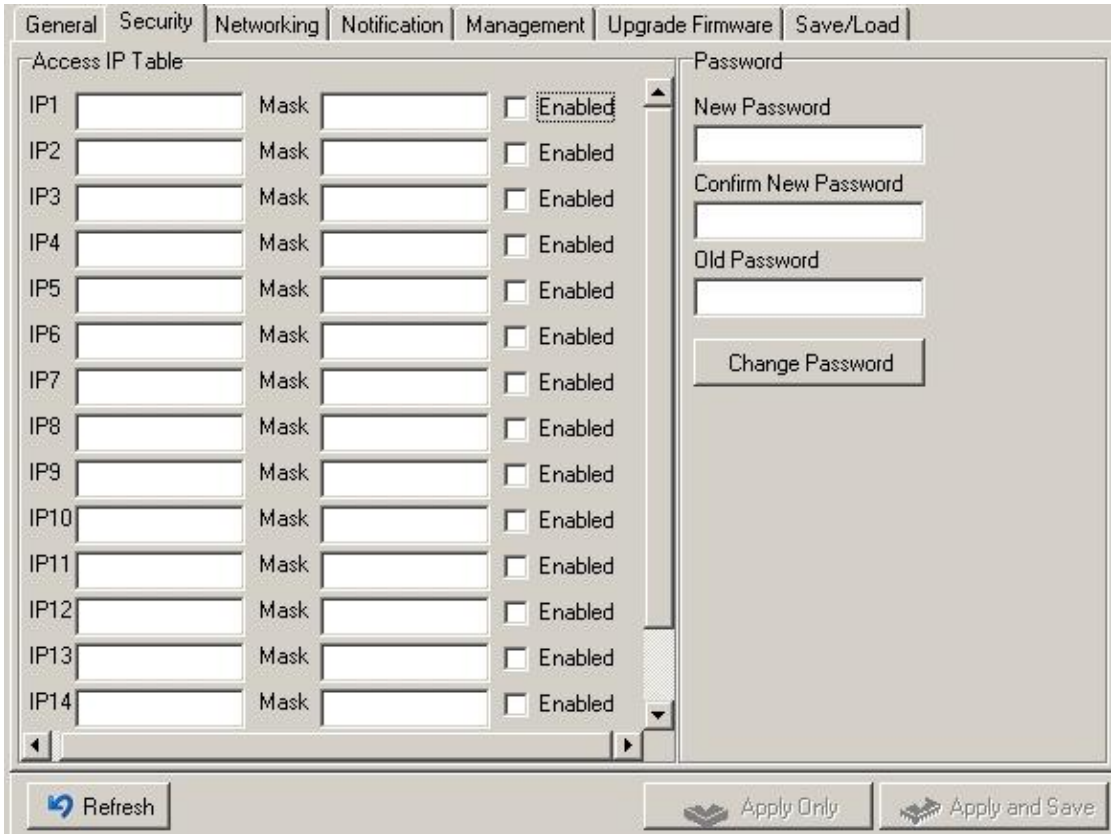


The following table describes the labels in this screen.

Label	Description
Device Name/location	You can set the device name or related information. By clicking "Locate On" button you can locate the serial server's position.
Set SNTP	Input the SNTP server domain name or IP address, port and select the Time zone.
Set Auto IP Report	By Clicking the "**Get current Host**" button you will get your local IP, and then set the Report interval time. The device server will report its status periodically.

At IP collection option show the device server status. The report interval is 0 indicate disable this setting (default). But you can set the other IP or Port.

Security

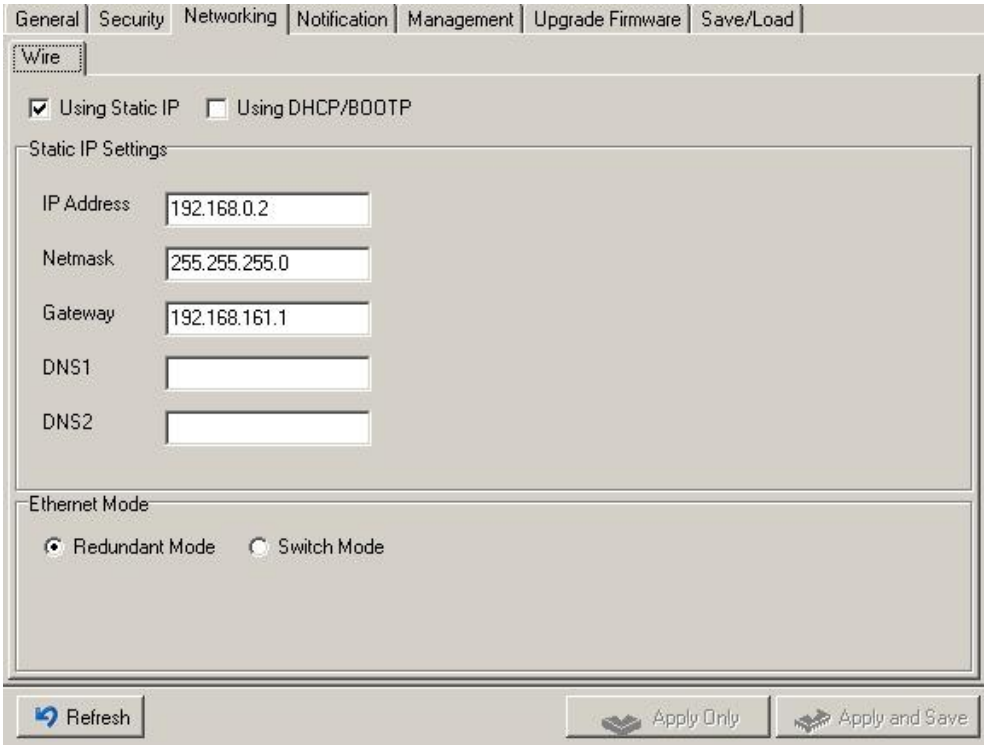


The following table describes the labels in this screen.

Label	Description
Accessible IP Setting	To prevent unauthorized access by setting host IP addresses and network masks.
Password setting	You can set the password to prevent unauthorized access from your server. Factory default is "**microsens**".

Network Setting

Device Server can connect the Network by wire a. You must assign a valid IP address for the device before attached in your network environment. Your network administrator should provide you the IP address and related settings. The IP address must be unique within the network (otherwise, device will not have a valid connection to the network). You can choose from three possible "**IP configuration**" modes: Static, DHCP/BOOTP. The Factory Default IP address is "**192.168.16.1**"

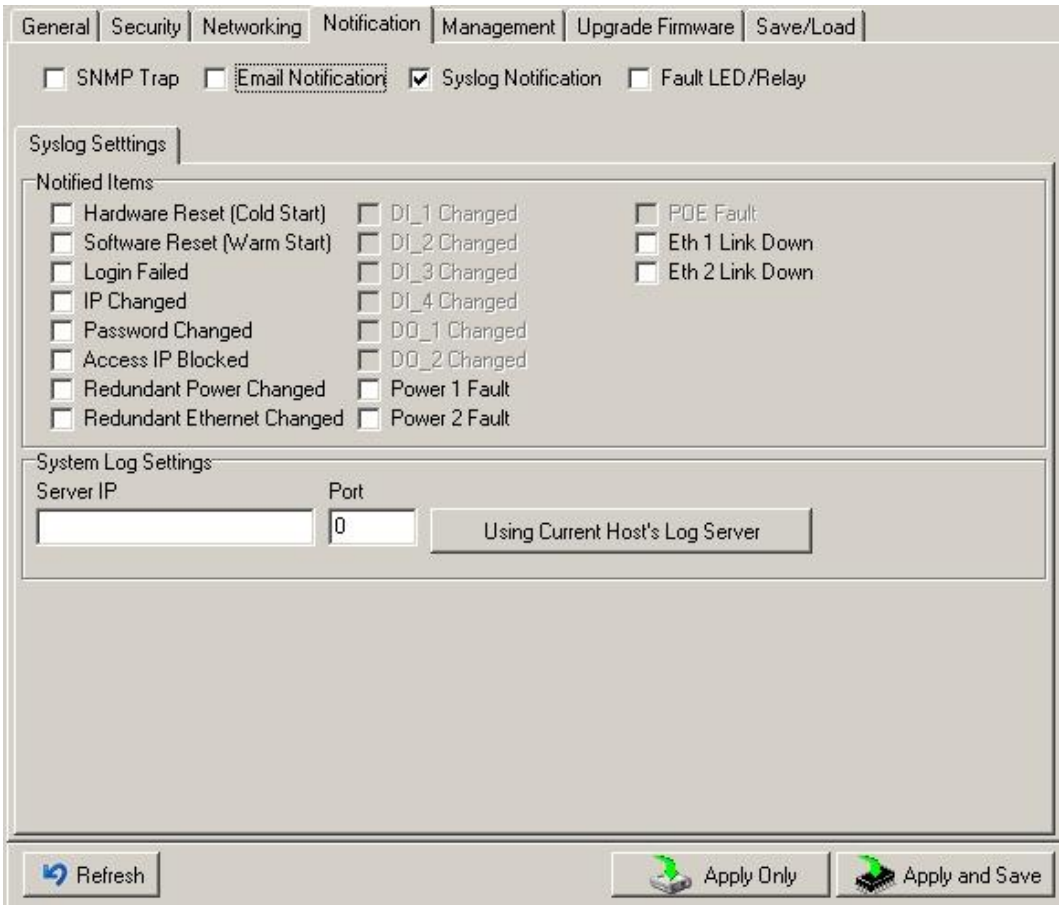


The following table describes the labels in this screen.

Label	Description
Using DHCP/BOOTP	IP Address automatically assigned by a DHCP server in your network.
Static IP Address	Manually assigning an IP address.
Subnet Mask	All devices on the network must have the same subnet mask to communicate on the network.
Gateway	Enter the IP address of the router in you network.
DNS Server	Enter the IP address of the DNS server, The DNS server translates domain names into IP address.
Switch Mode	**Redundant:** When the connection between master-link and LAN fails, the Device Server can automatically switch to another LAN port within10ms, and still guarantees a non-stop connection **Switch:** Daisy Chain support to reduce usage of switch ports.

Notification

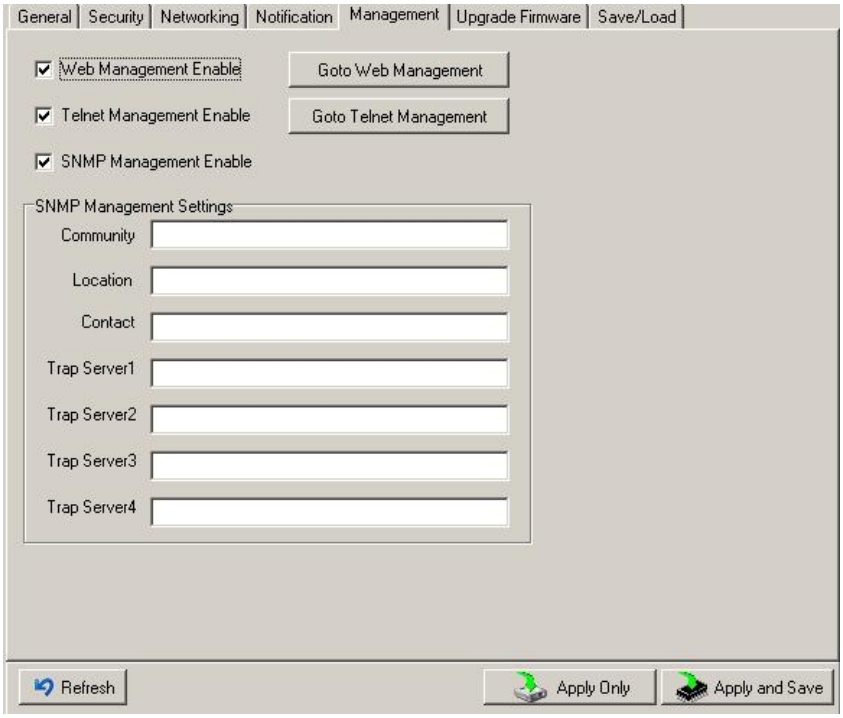
Specify the events that should be notified to the administrator. The events can be alarmed by E-mail, SNMP trap, or system log.



The following table describes the labels in this screen.

Label	Description
SNMP Trap	To notify events by SNMP trap.
Email Notification	To notify events by Email.
Syslog Notification	To notify events by Syslog.
Notify items	Events to be notified.
Apply	Apply current setting.
Apply and Save	Apply and save current setting.

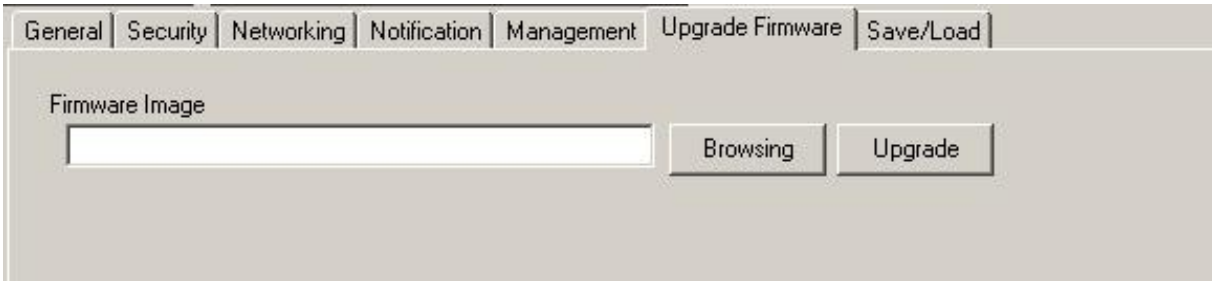
Management



The following table describes the labels in this screen.

Label	Description
Web Management Enable	To enable management from Web. Click "**Goto Web Management**" button to access web.
Telnet Management Enable	To enable management by Telnet. Click "**Goto Telnet Management**" button to execute Telnet command.
SNMP Management Enable	To enable management by SNMP.
SNMP Management Settings	To configure SNMP related settings.

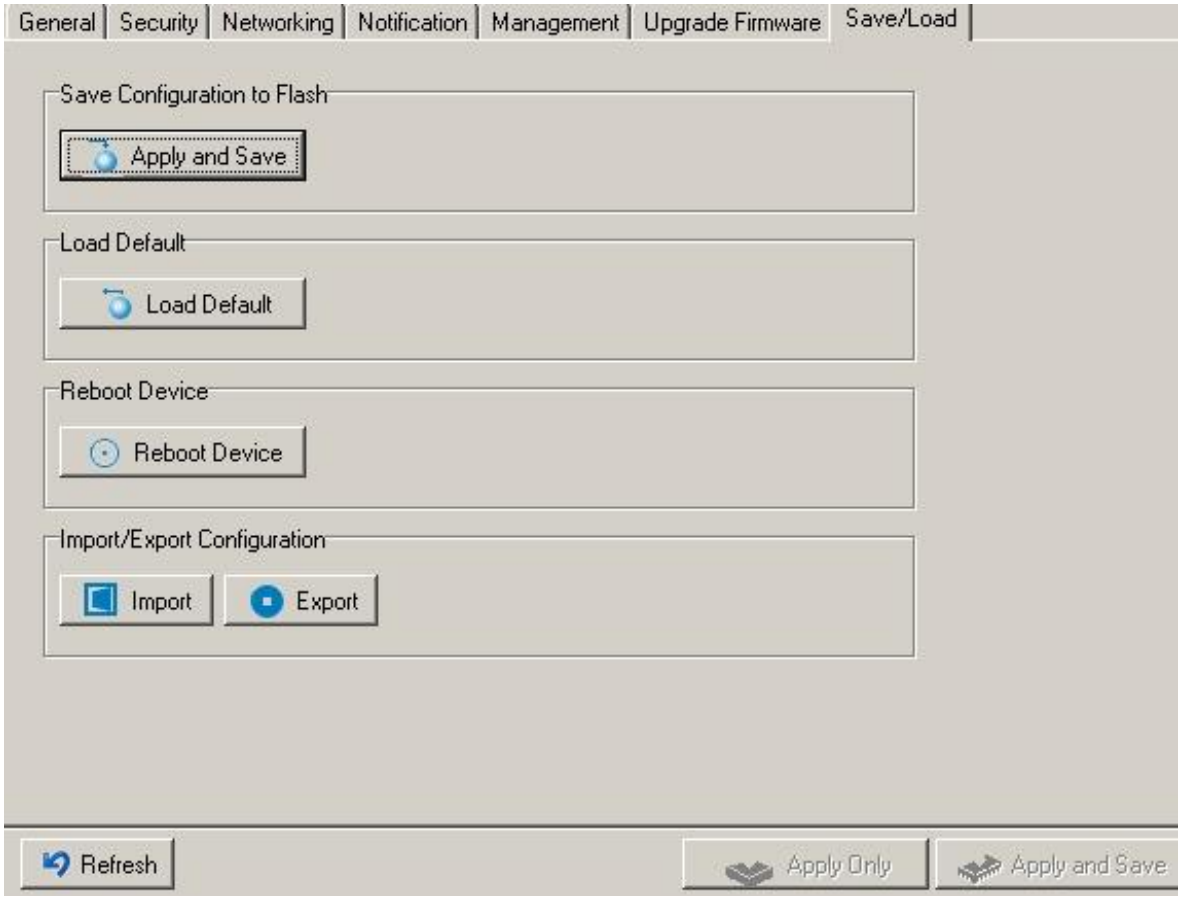
Upgrade Firmware



The following table describes the labels in this screen.

Label	Description
Browsing	Browse the file and upgrade
Upgrade	Enable the firmware upgrade.

Save/Load

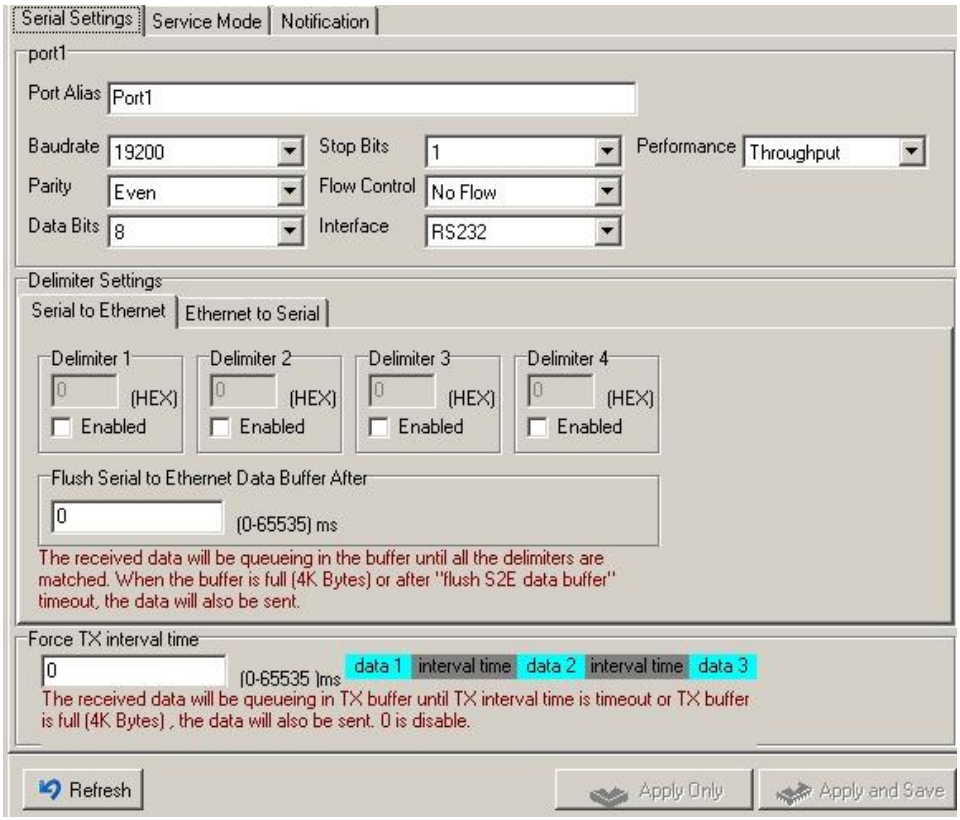


The following table describes the labels in this screen.

Label	Description
Save Configuration to Flash	Save current configuration into flash memory.
Load Default	Load default configuration except the network settings. If you want to load all factory default, you need to press "**Reset**" button on the device (Hardware restore).
Reboot Device	Reboot the device server (warm start).
Import Configuration	Restore the previous exported configuration.
Export Configuration	Exported current configuration to a file to backup the configuration.

Configure serial port

Serial Settings



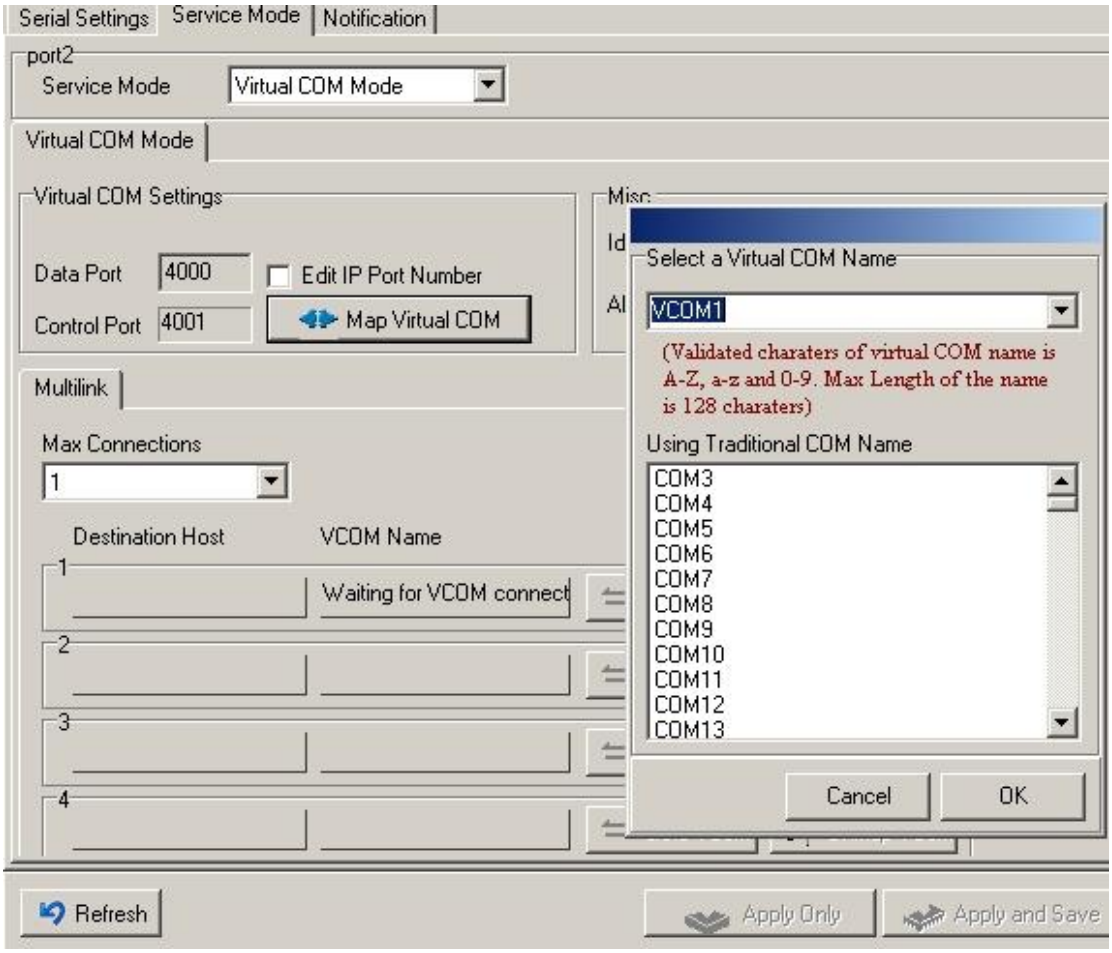
The following table describes the labels in this screen.

Label	Description
Port Alias	Remark the port to hint the connected device.
Interface	RS232 / RS422 / RS485(2-wires) / RS485(4-wires)
Baud rate	110bps/300bps/1200bps/2400bps/4800bps/9600bps/19200bps/ 38400bps/57600bps/115200bps/230400bps/460800bps
Data Bits	5, 6, 7, 8
Stop Bits	1, 2 (1.5)
Parity	No, Even, Odd, Mark, Space
Flow Control	No, XON/XOFF, RTS/CTS, DTR/DSR
Performance	Throughput: This mode optimized for highest transmission speed. Latency: This mode optimized for shortest response time.
Serial to Ethernet	**Delimiter:** You can define max. 4 delimiters (00~FF, Hex) for each way. The data will be hold until the delimiters are received or the option="**Flush Serial to Ethernet data buffer**" times out. 0 means disable. Factory default is 0. **Flush Data Buffer After:** The received data will be queuing in the buffer until all the delimiters are matched. When the buffer is full (4K Bytes) or after "**flush S2E data buffer**" timeout the data will also be sent. You can set the time from 0 to 65535 seconds.

Ethernet to Serial	**Delimiter:** You can define max. 4 delimiters (00~FF, Hex) for each way. The data will be hold until the delimiters are received or the option **"Flush Ethernet to Serial data buffer"** times out. 0 means disable. Factory default is 0. **Flush Data Buffer After:** The received data will be queuing in the buffer until all the delimiters are matched. When the buffer is full (4K Bytes) or after **"flushE2S data buffer"** timeout the data will also be sent. You can set the time from 0 to 65535 seconds.
Force TX Interval Time	Force TX interval time is to specify the timeout when no data has been transmitted. When the timeout is reached or TX buffer is full (4K Bytes), the queued data will be sent. 0 means disable. Factory default value is 0.

Service Mode – Virtual COM Mode

In Virtual COM Mode, The driver establishes a transparent connection between host and serial device by mapping the Port of the serial server serial port to local COM port on the host computer. Virtual COM Mode also supports up to 5 simultaneous connections, so that multiple hosts can send or receive data by the same serial device at the same time.



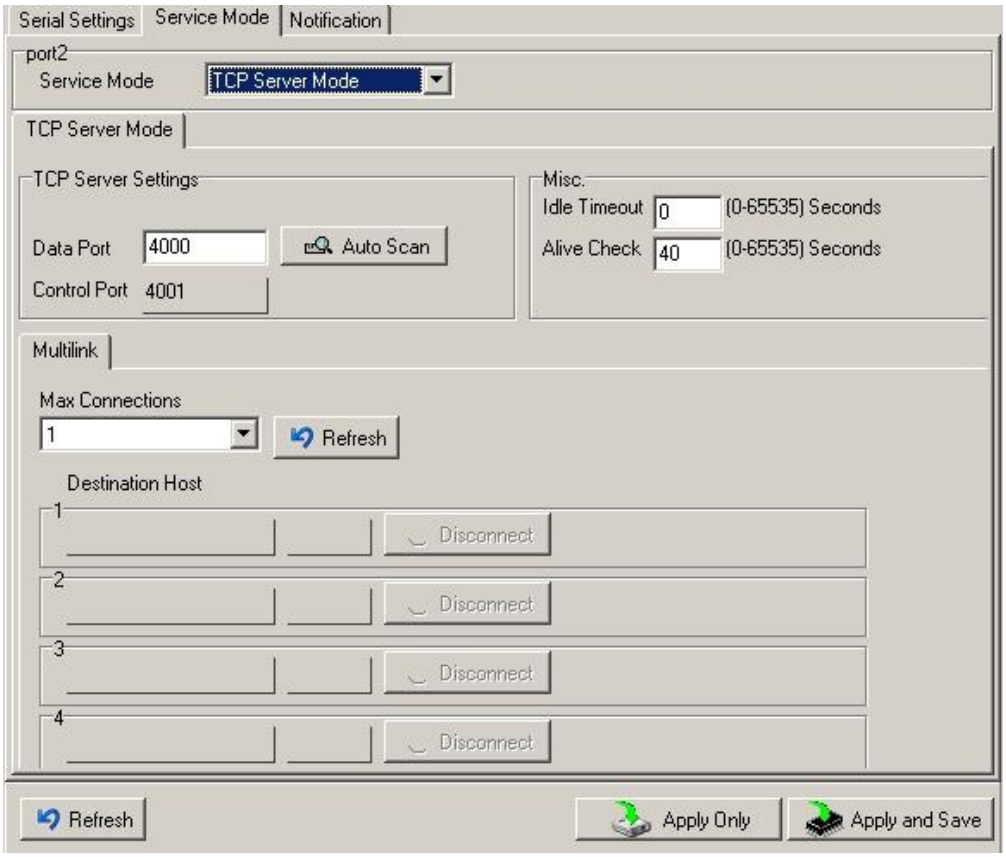
The following table describes the labels in this screen.

Label	Description
Map Virtual COM	Select a Virtual COM Name to map on.
Max Connection	The number of Max connection can support simultaneous connections are 5, default values is 1.
Idle Timeout	When serial port stops data transmission for a defined period of time (Idle Timeout), the connection will be closed and the port will be freed and try to connect with other hosts. 0 indicate disable this function. Factory default value is 0. If Multilink is configured, only the first host connection is effective for this setting.
Alive Check	The serial device will send TCP alive-check package in each defined time interval (Alive Check) to remote host to check the TCP connection. If the TCP connection is not alive, the connection will be closed and the port will be freed. 0 indicate disable this function. Factory default is 0.

***Not allowed to mapping Virtual COM from web*

Service Mode – TCP Server Mode

In TCP Server Mode, DS is configured with a unique Port combination on a TCP/IP network. In this case, DS waits passively to be contacted by the device. After a connection is established, it can then proceed with data transmission. TCP Server mode also supports up to 5 simultaneous connections, so that multiple device can receive data from the same serial device at the same time.

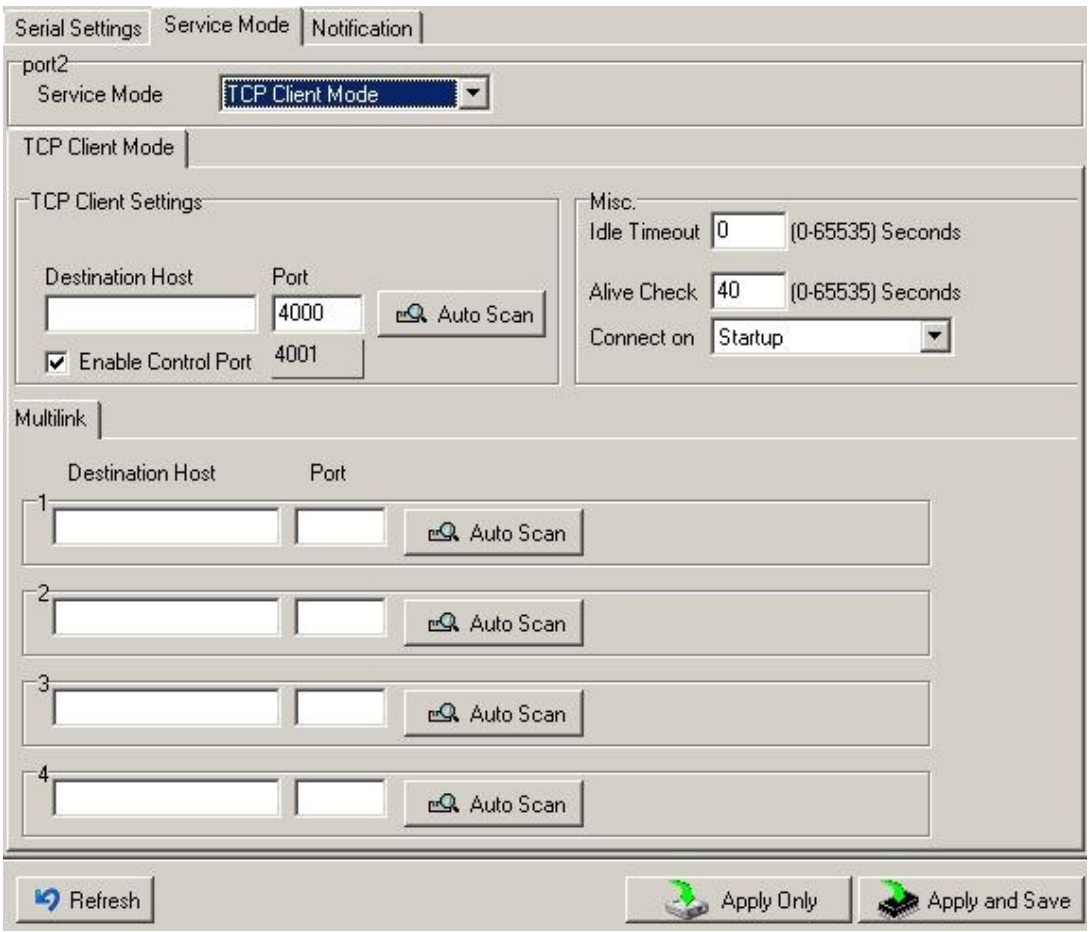


The following table describes the labels in this screen.

Label	Description
Data Port	Set the port number for data transmission.
Auto Scan	Scan the data port automatically.
Idle Timeout	When serial port stops data transmission for a defined period of time (Idle Timeout), the connection will be closed and the port will be freed and try to connect with other hosts. 0 indicate disable this function. Factory default value is 0. If Multilink is configured, only the first host connection is effective for this setting.
Alive Check	The serial device will send TCP alive-check package in each defined time interval (Alive Check) to remote host to check the TCP connection. If the TCP connection is not alive, the connection will be closed and the port will be freed. 0 indicate disable this function. Factory default is 0.
Max Connection	The number of Max connection can support simultaneous connections are 5, default values is 1.

Service Mode – TCP Client Mode

In TCP Client Mode, device can establish a TCP connection with server by the method you have settled (Startup or any character). After the data has been transferred, device can disconnect automatically from the server by using the TCP alive check time or Idle time settings.

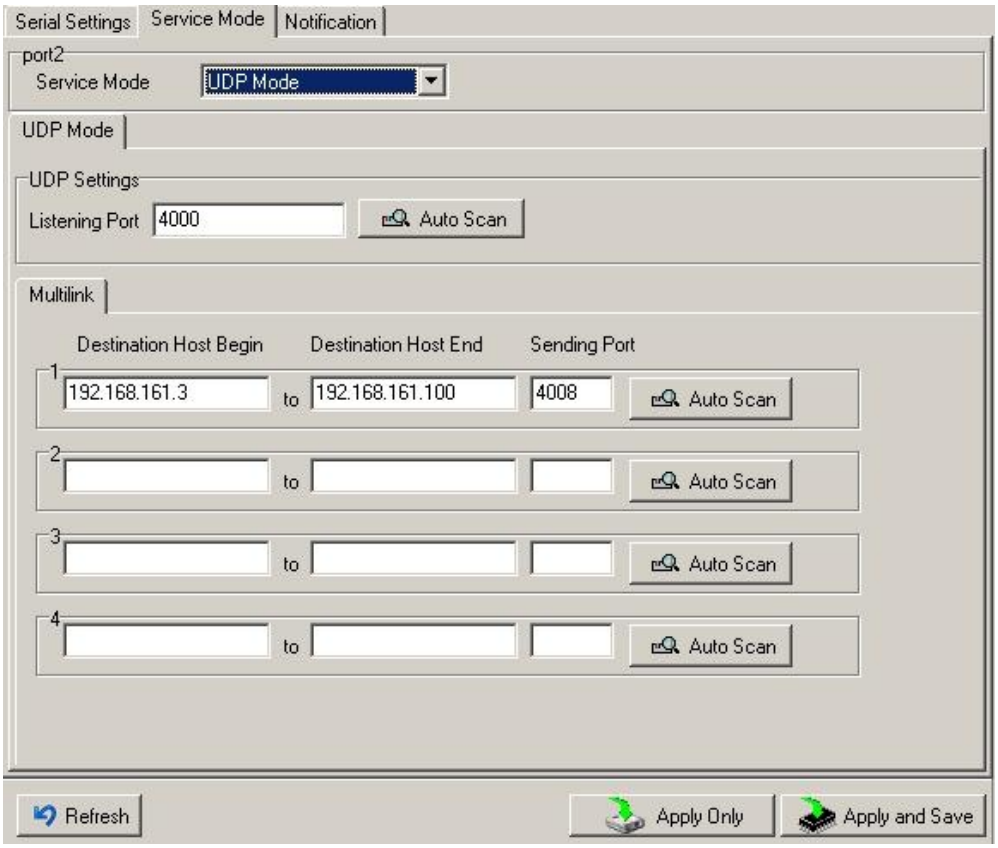


The following table describes the labels in this screen.

Label	Description
Destination Host	Set the IP address of host.
Port	Set the port number of data port.
Idle Timeout	When serial port stops data transmission for a defined period of time (Idle Timeout), the connection will be closed and the port will be freed and try to connect with other hosts. 0 indicate disable this function. Factory default value is 0. If Multilink is configured, only the first host connection is effective for this setting.
Alive Check	The serial device will send TCP alive-check package in each defined time interval (Alive Check) to remote host to check the TCP connection. If the TCP connection is not alive, the connection will be closed and the port will be freed. 0 indicate disable this function. Factory default is 0.
Connect on Startup	The TCP Client will build TCP connection once the connected serial device is started.
Connect on Any Character	The TCP Client will build TCP connection once the connected serial device starts to send data.

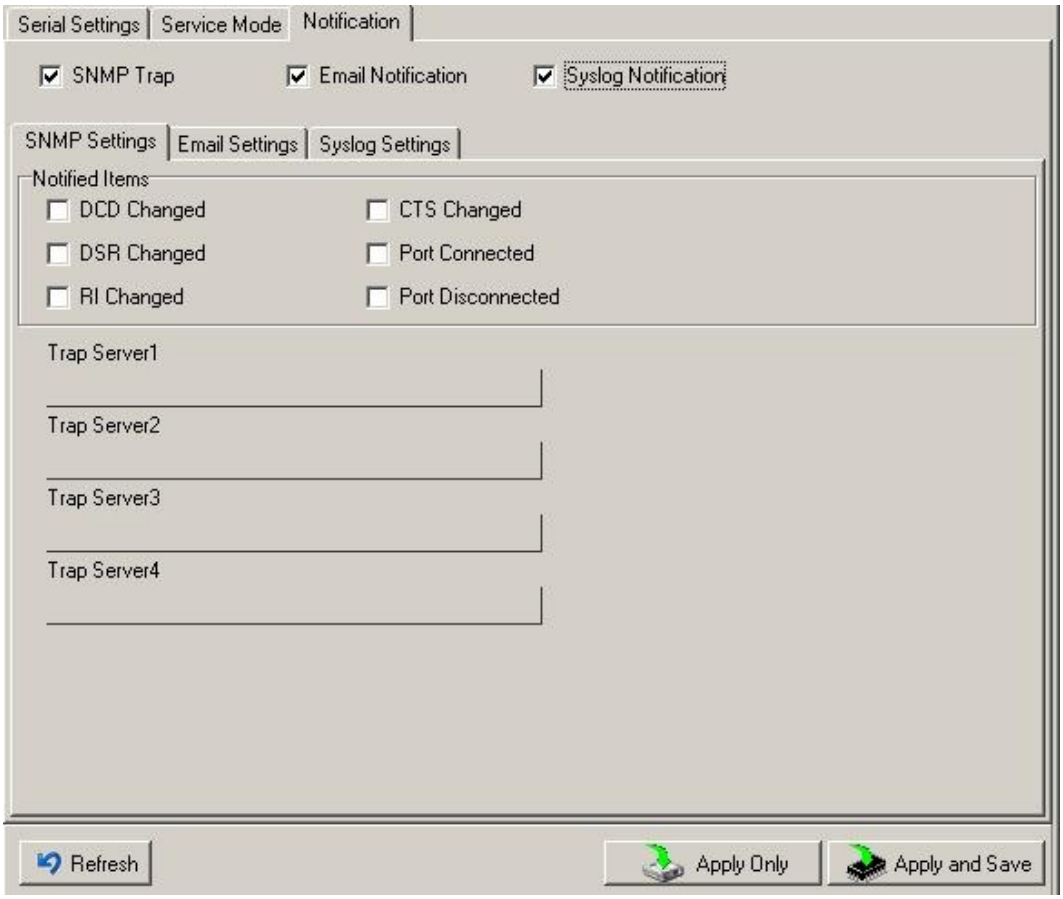
Service Mode – UDP Mode

Compared to TCP communication, UDP is faster and more efficient. In UDP mode, you can Uni-cast or Multi-cast data from the serial device server to host computers, and the serial device can also receive data from one or multiple host.



Notification

Specify the events that should be noticed. The events can be noticed by E-mail, SNMP trap or system log.



The following table describes the labels in this screen.

Label	Description
DCD changed	When DCD (Data Carrier Detect) signal changes, it indicates that the modem connection status has changed. A Notification will be sent.
DSR changed	When DSR (Data Set Ready) signal changes, it indicates that the data communication equipment is powered off. A Notification will be sent.
RI changed	When RI (Ring Indicator) signal changes, it indicates that the incoming of a call. A Notification will be sent.
CTS changed	When CTS (Clear To Send) signal changes, it indicates that the transmission between computer and DCE can proceed. A notification will be sent.
Port connected	In TCP Server Mode, when the device accepts an incoming TCP connection, this event will be trigger. In TCP Client Mode, when the device has connected to the remote host, this event will be trigger. In Virtual COM Mode, Virtual COM is ready to use. A notification will be sent.
Port disconnected	In TCP Server/Client Mode, when the device lost the TCP link, this event will be trigger. In Virtual COM Mode, When Virtual COM is not available, this event will be trigger. A notification will be sent.

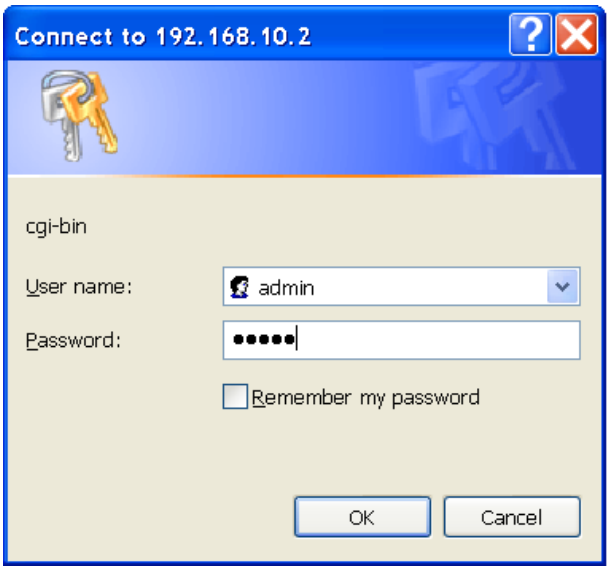
Configuration by Web Browser

Step 1: Input the IP address of DS with "**https://192.168.16.1**" in the Address input box of IE.

Step 2: Click "**Yes**" button on the dialog box.

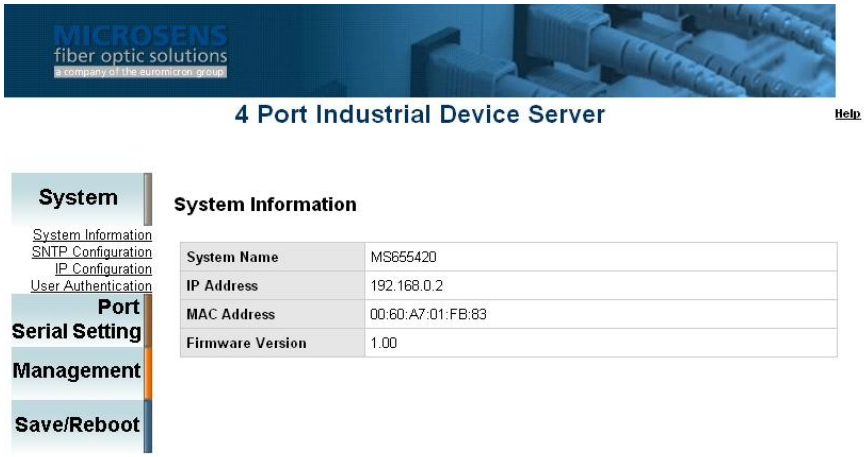
Security Alert
Information you exchange with this site cannot be viewed or changed by others. However, there is a problem with the site's security certificate.
The security certificate was issued by a company you have not chosen to trust. View the certificate to determine whether you want to trust the certifying authority.
The security certificate date is valid.
The name on the security certificate is invalid or does not match the name of the site
Do you want to proceed?
Yes
No
View Certificate

Step 3: Input the name and password, then click "**OK**".



Factory default:* "microsens**"

Step 4: The system information will be shown as below.



Time (SNTP)

The following table describes the labels in this screen.

Label	Description
Name	You can set the name of DS.
SNTP	Enable the SNTP server.
Time zone	After you set the SNTP enable, select the time zone you located.
Time server	Input SNTP server domain name or IP address and Port.
Console	Telnet Console (SSH) is included for security reasons. In some cases, you may need to disable this function to prevent unauthorized access from internet. The factory default is enable.

IP Configuration

You must assign a valid IP address for Device Server before attached in your network environment. Your network administrator should provide you with the IP address and related settings.

The IP address must be unique and within the network (otherwise, Device Server will not have a valid connection to the network). You can choose from three possible "**IP configuration**" modes: Static, DHCP/BOOTP. The Factory Default IP address is "**192.168.16.1**"

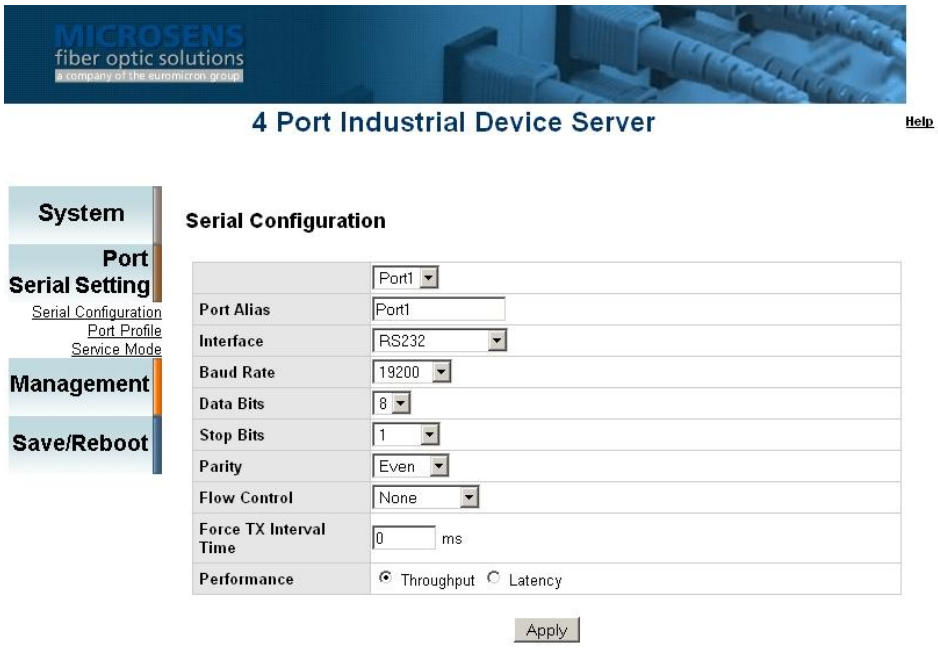
The following table describes the labels in this screen.

Label	Description
DHCP/BOOTP	Obtain the IP address automatically from DHCP server.
Static IP Address	Assigning an IP address manually.
Subnet Mask	Set the subnet mask to communicate on the network.
Gateway	Enter the IP address of the router in you network.
DNS Server	Enter the IP address of the DNS server to translate domain names into IP address.
Auto IP Report	The device server will report its status periodically. At VCOM Manager>IP collection option show the device server status. The report interval is 0 indicate disable this setting (default). But you can set the other IP or Port.
Switch Mode	**Redundant:** When the connection between master-link and LAN fails, the DS can automatically switch to another LAN port within10mS, and still guarantees a non-stop connection **Switch:** Daisy Chain support to reduce usage of switch ports.

Authentication

You can set the password to prevent unauthorized access from network. Input the "**Old password**" and "**New password**" to change the password. Factory default is "**microsens**".

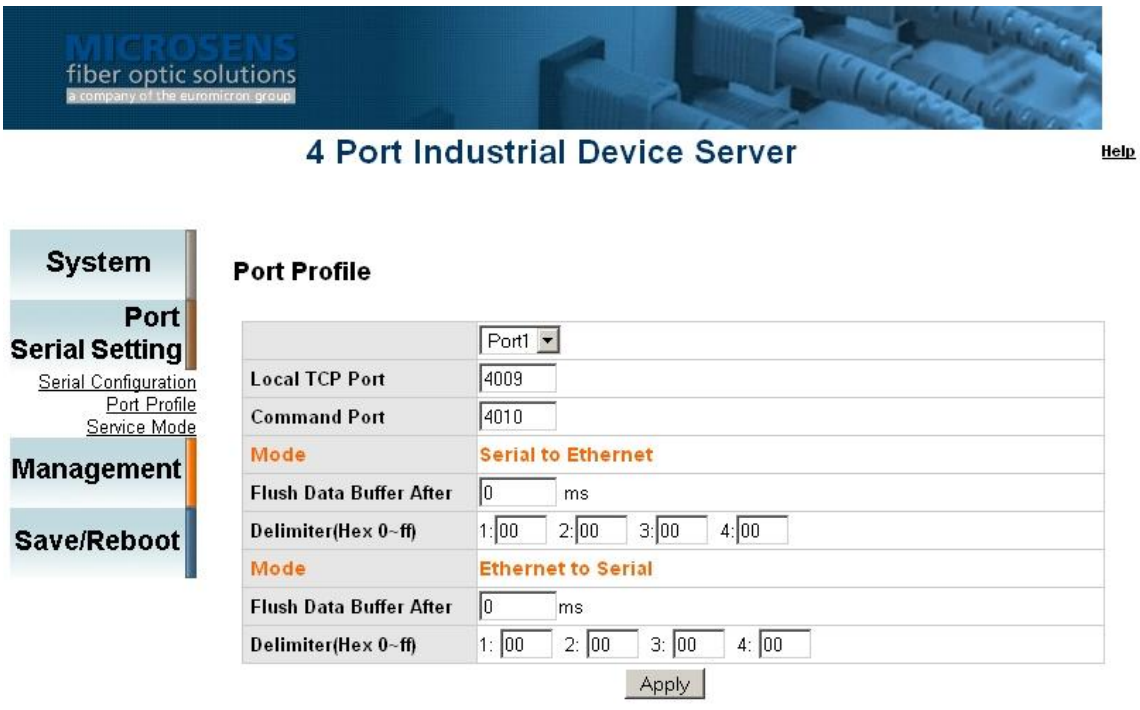
Serial configuration



The following table describes the labels in this screen.

Label	Description
Port Alias	Remark the port to hint the connected device.
Interface	RS232 / RS422 / RS485(2-wires) / RS485(4-wires)
Baud rate	110bps/300bps/1200bps/2400bps/4800bps/9600bps/19200bps/ 38400bps/57600bps/115200bps/230400bps/460800bps
Data Bits	5, 6, 7, 8
Stop Bits	1, 2 (1.5)
Parity	No, Even, Odd, Mark, Space
Flow Control	No, XON/XOFF, RTS/CTS, DTR/DSR
Force TX Interval Time	Force TX interval time is to specify the timeout when no data has been transmitted. When the timeout is reached or TX buffer is full (4K Bytes), the queued data will be sent. 0 means disable. Factory default value is 0.
Performance	Throughput: This mode optimized for highest transmission speed. Latency: This mode optimized for shortest response time.
Apply	Activate settings on this page.

Port Profile

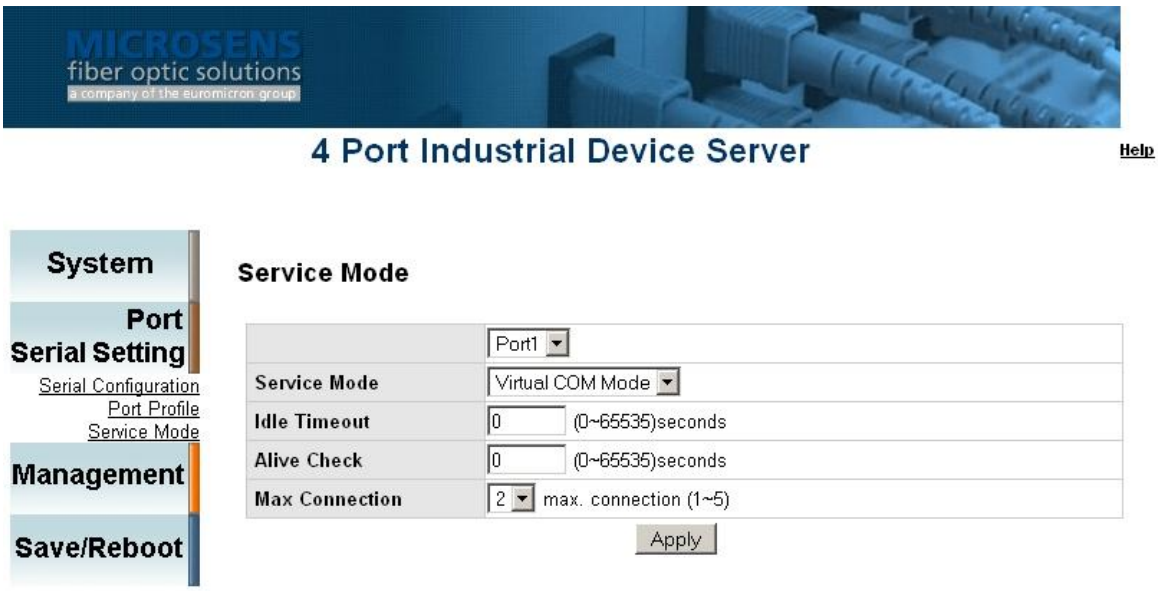


The following table describes the labels in this screen.

Label	Description
Serial to Ethernet	**Flush Data Buffer After:** The received data will be queued in the buffer until all the delimiters are matched. When the buffer is full (4K Bytes) or after "**flush S2E data buffer**" timeout, the data will also be sent. You can set the time from 0 to 65535 seconds. **Delimiter:** You can define max. 4 delimiters (00~FF, Hex) for each way. The data will be hold until the delimiters are received or the option "**Flush Serial to Ethernet data buffer**" times out. 0 means disable. Factory default is 0
Ethernet to serial	**Flush Data Buffer After:** The received data will be queued in the buffer until all the delimiters are matched. When the buffer is full (4K Bytes) or after "**flush E2S data buffer**" timeout, the data will also be sent. You can set the time from 0 to 65535 seconds. **Delimiter:** You can define max. 4 delimiters (00~FF, Hex) for each way. The data will be hold until the delimiters are received or the option "**Flush Ethernet to Serial data buffer**" times out. 0 means disable. Factory default is 0

Service Mode – Virtual COM Mode

In Virtual COM Mode, the driver establishes a transparent connection between host and serial device by mapping the Port of the serial server serial port to local COM port on the host computer. Virtual COM Mode also supports up to 5 simultaneous connections, so that multiple hosts can send or receive data by the same serial device at the same time.



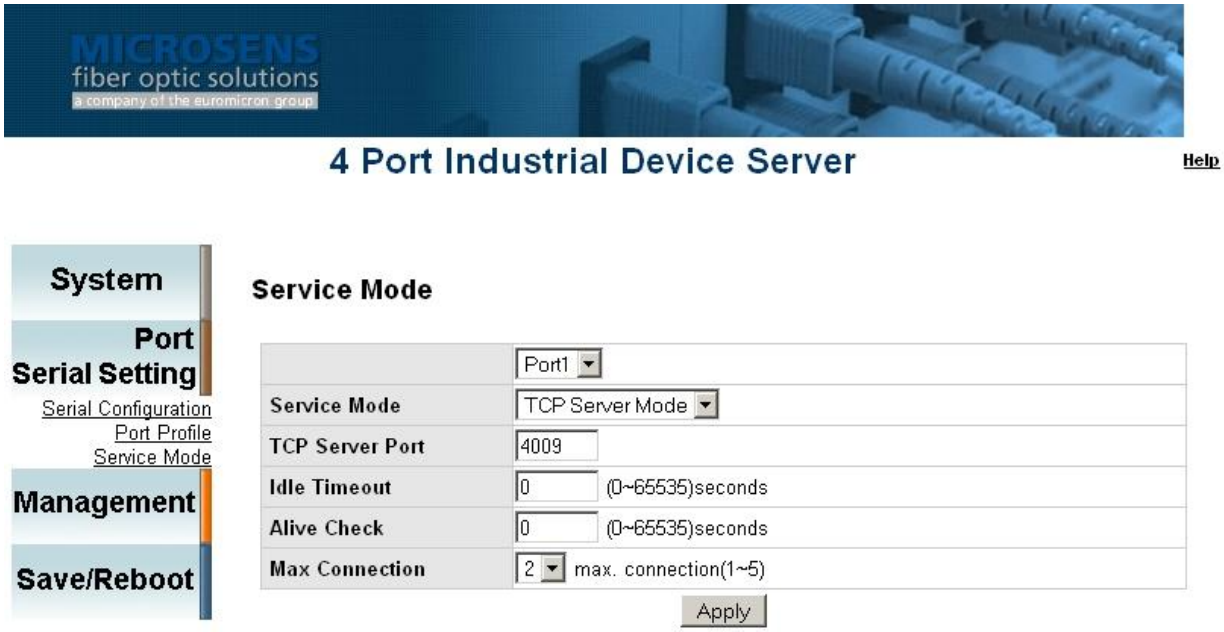
The following table describes the labels in this screen.

Label	Description
Idle Timeout	When serial port stops data transmission for a defined period of time (Idle Timeout), the connection will be closed and the port will be freed and try to connect with other hosts. 0 indicate disable this function. Factory default value is 0. If Multilink is configured, only the first host connection is effective for this setting.
Alive Check	The serial device will send TCP alive-check package in each defined time interval (Alive Check) to remote host to check the TCP connection. If the TCP connection is not alive, the connection will be closed and the port will be freed. 0 indicate disable this function. Factory default is 0.
Max Connection	The number of Max connection can support simultaneous connections are 5, default values is 1.

**Not allowed to mapping Virtual COM from web*

Service Mode – TCP Server Mode

In TCP Server Mode, Device Server is configured with a unique Port combination on a TCP/IP network. In this case, device waits passively to be contacted by the device. After the device establishes a connection with the serial device, it can then proceed with data transmission. TCP Server mode also supports up to 5 simultaneous connections, so that multiple device can receive data from the same serial device at the same time.

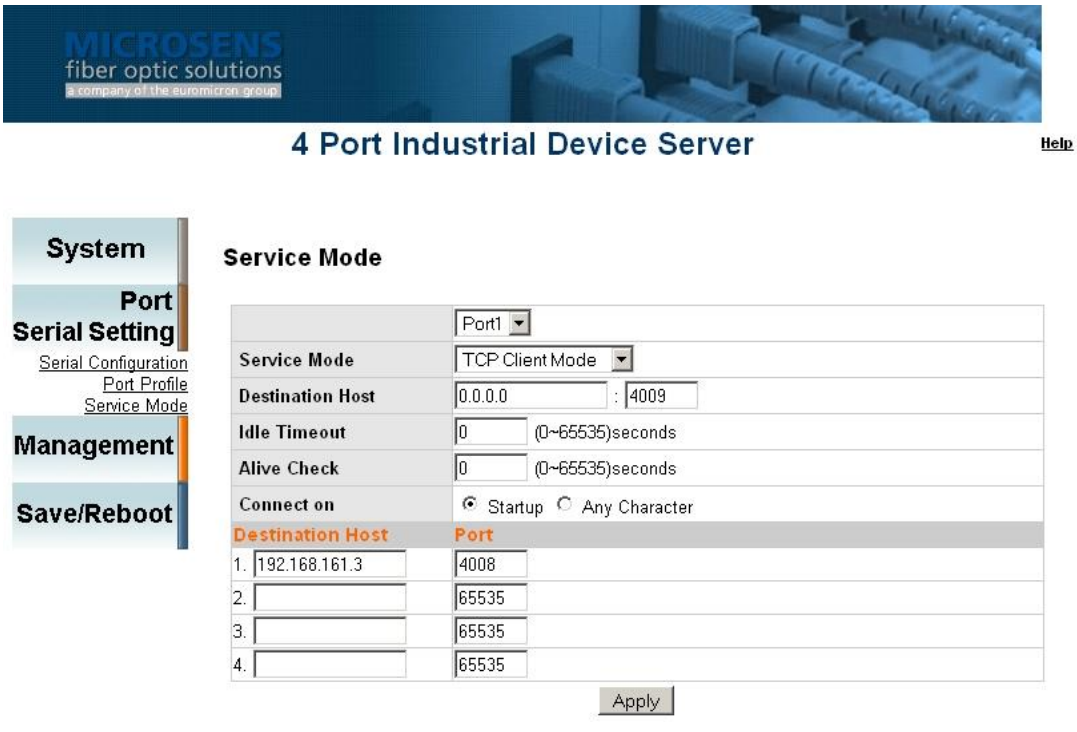


The following table describes the labels in this screen.

Label	Description
TCP Server Port	Set the port number for data transmission.
Idle Timeout	When serial port stops data transmission for a defined period of time (Idle Timeout), the connection will be closed and the port will be freed and try to connect with other hosts. 0 indicate disable this function. Factory default value is 0. If Multilink is configured, only the first host connection is effective for this setting.
Alive Check	The serial device will send TCP alive-check package in each defined time interval (Alive Check) to remote host to check the TCP connection. If the TCP connection is not alive, the connection will be closed and the port will be freed. 0 indicate disable this function. Factory default is 0.
Max Connection	The number of Max connection can support simultaneous connections are 5, default values is 1.

Service Mode – TCP Client Mode

In TCP Client Mode, device can establish a TCP connection with server by the method you set (Startup or any character). After the data has been transferred, device can disconnect automatically from the server by using the TCP alive check time or Idle timeout settings.



The following table describes the labels in this screen.

Label	Description
Destination Host	Set the IP address of host and the port number of data port. .
Idle Timeout	When serial port stops data transmission for a defined period of time (Idle Timeout), the connection will be closed and the port will be freed and try to connect with other hosts. 0 indicate disable this function. Factory default value is 0. If Multilink is configured, only the first host connection is effective for this setting.
Alive Check	The serial device will send TCP alive-check package in each defined time interval (Alive Check) to remote host to check the TCP connection. If the TCP connection is not alive, the connection will be closed and the port will be freed. 0 indicate disable this function. Factory default is 0.
Connect on Startup	The TCP Client will build TCP connection once the connected serial device is started.
Connect on Any Character	The TCP Client will build TCP connection once the connected serial device starts to send data.

Service Mode – UDP Client Mode

Compared to TCP communication, UDP is faster and more efficient. In UDP mode, you can Uni-cast or Multi-cast data from the serial device server to host computers, and the serial device can also receive data from one or multiple host.

Management

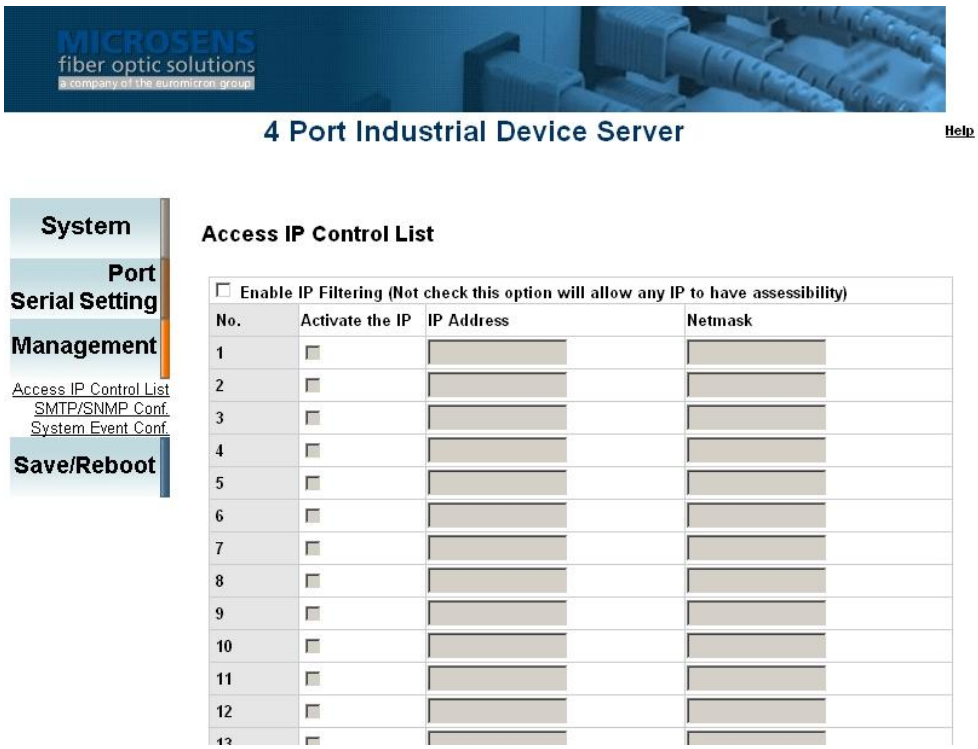
Access IP Control

Access IP Control Settings allow you to add or block the remote host IP addresses to prevent unauthorized access. If host's IP address is in the accessible IP table, then the host will be allowed to access the Device Server. You can choose one of the following cases by setting the parameter.

1. Only one host with a special IP address can access the device server, "**IP address /255.255.255.255**" (e.g., "**192.168.0.1/255.255.255.255**").

2. Hosts on a specific subnet can access the device server.
   "**IP address/255.255.255.0**" (e.g., "**192.168.0.2/255.255.255.0**")

3. Any host can access the device server. Disable this function by un-checking the "**Enable IP Filter**" checkbox

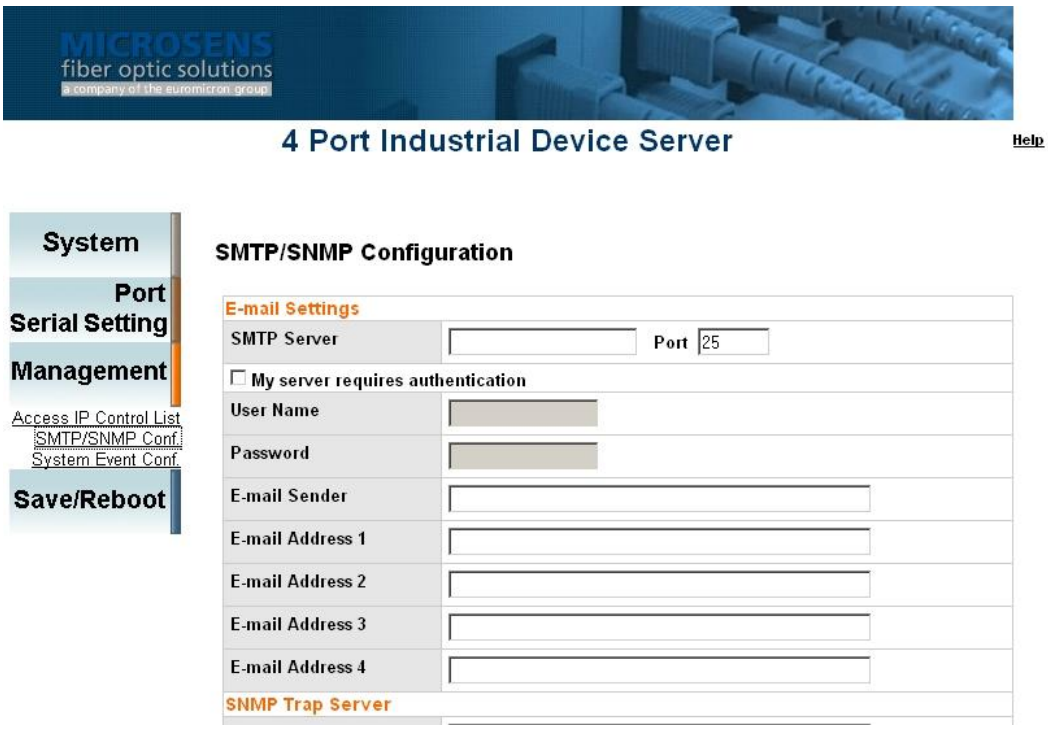


SMTP/SNMP Conf

Email Server configuration includes the mail server's IP address or domain. If the authentication is required, specify your name and password. There are 4 Email addresses that you can specify to receive the notification.

SNMP Server configuration includes the SNMP Trap Server IP address, Community, Location and Contact. There are 4 SNMP addresses you can specify to receive the notification.

SysLog server configuration includes the server IP and server Port. This option need to use with VCOM Manager.



System Event Conf.

Specify the events that should be notified to the administrator. The events can be alarmed by E-mail, SNMP trap, or system log.

MICROSENS
fiber optic solutions
a company of the euromicron group
4 Port Industrial Device Server
Help
System
Port
Serial Setting
Management
Access IP Control List
SMTP/SNMP Conf.
System Event Conf.
Save/Reboot
System Event Configuration
Device Event Notification
Hardware Reset (Cold Start) SMTP Mail SNMP Trap Syslog
Software Reset (Warm Start) SMTP Mail SNMP Trap Syslog
Login Failed SMTP Mail SNMP Trap Syslog
IP Address Changed SMTP Mail SNMP Trap Syslog
Password Changed SMTP Mail SNMP Trap Syslog
Access IP Blocked SMTP Mail SNMP Trap Syslog
Redundant Power Changed SMTP Mail SNMP Trap Syslog
Redundant Ethernet Changed SMTP Mail SNMP Trap Syslog
Port Event Notification
Port1

The following table describes the labels in this screen.

Label	Description
Hardware Reset (Cold Start)	This refers to starting the system from power off (contrast this with warm start). When performing a cold start, Device Server will automatically issue an Auto warning message by sending E-mail, log information or an SNMP trap after booting.
Software Reset (Warm Start)	This refers to restart the computer without turning the power off. When performing a warm start, Device Server will automatically send an E-mail, log information or SNMP trap after reboot.
Login Failed	When an unauthorized access from the Console or Web interface, a notification will be sent.
IP Address Changed	When IP address of device changed, a notification will be sent.
Password Changed	When password of device changed, a notification will be sent.
Access IP Blocked	When the host accesses the device with blocked IP addresses, a notification will be sent.
Redundant Power Change	When status of power changed, a notification will be sent.
Redundant Ethernet Change	When status of Ethernet port changed, a notification will be sent.
DCD changed	When DCD (Data Carrier Detect) signal changes, it indicates that the modem connection status has been changed. A Notification will be sent.
DSR changed	When DSR (Data Set Ready) signal changes, it indicates that the data communication equipment is powered off. A Notification will be sent.
RI changed	When RI (Ring Indicator) signal changes, it indicates an incoming call. Notification will be sent.
CTS changed	When CTS (Clear To Send) signal changes, it indicates that the transmission between computer and DCE can proceed. A notification will be sent.
Port connected	In TCP Server Mode, when the device accepts an incoming TCP connection, this event will be trigger. In TCP Client Mode, when the device has connected to the remote host, this event will be trigger. In Virtual COM Mode, Virtual COM is ready to use. A notification will be sent.
Port disconnected	In TCP Server/Client Mode, when the device lost the TCP link, this event will be trigger. In Virtual COM Mode, When Virtual COM is not available, this event will be trigger. A notification will be sent.
Power 1 Fault	When Power 1 Fault, a notification will be sent and the Fault LED will be lighted.
Power 2 Fault	When Power 2 Fault, a notification will be sent and Fault LED will be lighted.
Eth1 link down	When Eth1 link down, a notification will be sent and Fault LED will be lighted.
Eth2 link down	When Eth2 link down, a notification will be sent and Fault LED will be lighted.

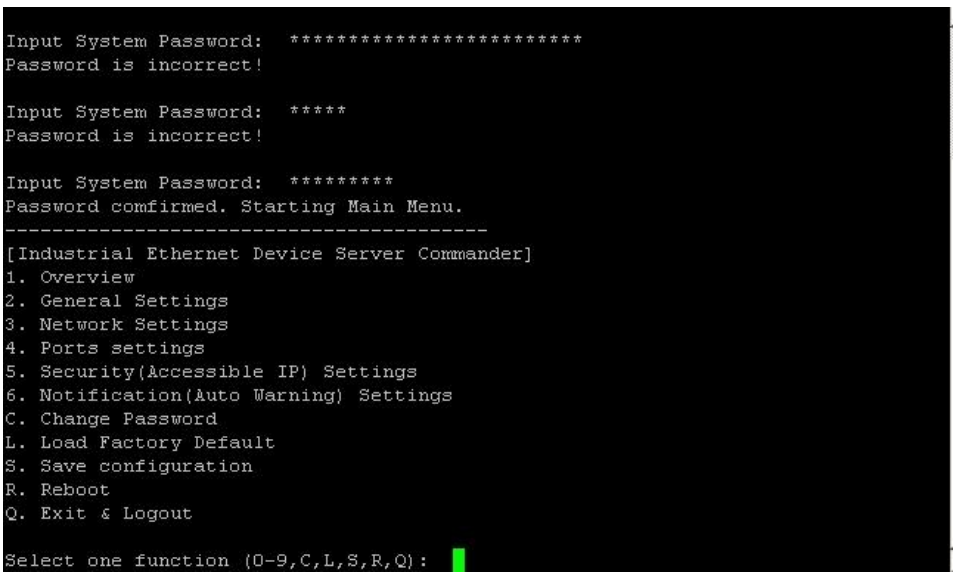
Save/Reboot

The following table describes the labels in this screen.

Label	Description
Factory Default	Load default configuration except settings of Network. If you want load all factory default, you should press "**Reset**" button about the five seconds on the device (Hardware restore).
Restore Configuration	Restore the previous exported configuration.
Backup Configuration	Export the current configuration to a file.
Upgrade Firmware	Upgrade to a new firmware with specified file.
Reboot Device	Reboot the device server (warm start).

Configuration by SSH Console

You can use SSH Tool (e.g., PUTTY) to access SSH console of Device Server. The SSH console interface is shown below.



Technical Specification

Type	4 Port Industrial Device Server
Ethernet	2x 10/100Base-T(X) which support Redundant Dual Ethernet or Switch Mode support. Auto-recover less than 10ms
Ethernet Connector	RJ-45
Protection	Built-in1.5KV magnetic isolation
Protocols	ICMP, IP, TCP, UDP, DHCP, BOOTP, ARP/RARP, DNS, SNMP MIB II, HTTPS, SSH
Serial Interface	4x RS232 / RS422 / 4(2)-Wire RS485. Which can be configured by VCOM Manager
Serial Connector	Male DB9 / 5 pin terminal block
Serial Baud Rate	110 bps to 460.8 Kbps
Data Bits	5, 6, 7, 8
Parity	odd, even, none, mark, space
Stop Bits	1. 1.5, 2
RS-232 signals	TxD, RxD, RTS, CTS, DTR, DSR, DCD, RI, GND
RS-422 signals	Tx+,Tx-, Rx+, Rx-,GND
RS-485 (4 wire) signals	Tx+,Tx-, Rx+, Rx-,GND
RS-485 (2 wire) signals	Data+, Data-,GND
Flow Control	XON/XOFF, RTS/CTS, DTR/DSR
Serial Line Protection	Built-in15KV ESD protection 2KV DC isolation for each port (optional)
LED Indicators	PWR P.O.E.(1)(2) / Ready: 1) Red On: Power is on and booting up. Red Blinking: Indicates an IP conflict, or DHCP or BOOTP server did not respond properly. 2) Green On: Power is on and functioning normally. Green Blinking: Located by Administrator. ETH1(2) Link / ACT: Amber ON/Blinking: 10 Mbps Ethernet Green ON/Blinking: 100 Mbps Ethernet Serial TX / RX LEDS: Red: Serial port is receiving data Green: Serial port is transmitting data. Fault: Fault alarm (Red)
Power Input	PWR1/2: 12~48VDC in 6-pin Terminal Block
Reverse Polarity Protection	Present at terminal block
Power Consumption	7 Watts MAX

Software Utility	VCOM Manager for Windows NT/2000/XP/2003/VISTA which include: Device discovery Auto IP report Device setting (run-time change, no rebooting) Access control list Group setting Device monitoring Serial port monitoring Log info Group Firmware update
Serial Mode	Virtual Com / TCP Server / TCP Client / UDP /Serial Tunnel TCP Alive Check Timeout Inactivity Timeout Delimiter for Data Packing Force TX Timeout for Data Packing
Multiple Link	5 Hosts simultaneous connection: Virtual Com / TCP server / TCP Client / UDP
VCOM Driver	Windows NT/2000/XP/2003/VISTA
Configuration	Web HTTPS console, SSH console, Console Command, VCOM Manager for Windows NT/2000/XP/VISTA
Operating Temperature	-10 to 60°C
Storage Temperature	-40 to 85°C
Operating Humidity	5% to 95% (Non-condensing)
Dimensions (WxDxH)	52mm x 106mm x 144mm
Casing	IP-30 protection
Approval	Shock IEC 60068-2-27 Free Fall IEC 60068-2-32 Vibration IEC 60068-2-6 EMI CISPR (EN55022) class A EMS EN61000-4-2 (ESD), EN61000-4-3 (RS) EN61000-4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6 (CS)

Order Information

Art.-No.	Description	Connectors
MS655420	4 Port Industrial Ethernet Device Server 4xRS232/422/485 to 2x10/100Base-TX	2x RJ-45 4x Male DB9 / 5 pin

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